Vol. 1, No. 1 March 1950

SYSTEMS AND PROCEDURES QUARTERLY

IN THIS ISSUE

	PAGE
The Coming Revolution of Paperwork—*J. W. Haslett*	1
President's Message—*R. B. Crean*	1
Two Controls: Tab Room, Telephone—*C. E. Noll*	2
Planning Procedures for Profit—*J. B. Joynt*	4
Checklist for Forms Design—*J. H. Rute*	9
To the Point—*National Systems Meeting*	11
Manual vs. Mechanized—*M. A. C. Hume*	12
Qualifications of Systems Men—*D. B. Armstrong*	13

PUBLISHED BY THE SYSTEMS AND PROCEDURES ASSOCIATION OF AMERICA

THE COMING REVOLUTION OF PAPERWORK

An Editorial

When future historians ponder the reasons for the survival of American business during the third quarter of the economically precarious Twentieth Century, the contributions made by the systems and procedures profession will be objectively scrutinized. To what extent, if any, did this profession strengthen the ability of business to clear the economic roadblocks strewn along the industrial avenues of the 1950's? How effective was this profession in providing management with the right answers to the perplexities of the era? Did this profession, in short, live up to its job?

The judgment of history, it becomes increasingly clear, will depend in large measure upon how skillfully systems people employ the techniques of their trade and how persuasive their past and future successes are to practical managements. Like the industrial revolution whose impact was felt in factory management during the first part of the century, a paperwork revolution is inevitable in office management during the next decade, for technology applies to the office no less than to the plant.

Business customs and habits acquired over the years are familiar obstacles to the systems man who tries to develop improvements. Yet, the systems man himself may fall victim to the same circumstance. Techniques in his work which succeeded yesterday, may today be outdated and tomorrow useless, as new and more effective approaches and solutions to problems are developed. A decade ago it was comparatively easy to keep abreast of the field, but, because the principles of systems management have been so rapidly and generally accepted in recent years, more and more are they being written about in lay publications.

As in any other area of endeavor, systems and procedures work progresses through the interchange of ideas among its practitioners. This magazine has come into being to further the ideas of specialists in the systems field, and to record them for the reference of the national membership of the Systems and Procedures Association of America. The contents of this quarterly publication will be largely drawn from the Association membership itself, but outside manuscripts of note will from time to time be included. It will be the aim of *Systems and Procedures Quarterly* to chronicle the progress of this profession and its techniques, and, whenever appropriate, comment editorially on the shortcomings which may become evident in the practice of methods work.

Modern business management is fully aware of the potentialities of the methods field, but top management support of this activity varies to the extent that the specialist can justify his function in the concrete language of visible managerial improvements Theoretical recommendations for change in organization or in procedure constitute the greatest danger to the reputation of a profession which can only survive if it recognizes the twin requirements that all change must be sound practically as well as theoretically. The systems man can no longer be solely methods minded. He must be management minded.

Just so long as there are executives, supervisors or employees who remain uninitiated, systems and procedures work will encounter resistance. The first job of the technician, therefore, is to initiate his entire organization into the purpose and technique of organization and procedure work, speaking the simple language of business and industry and not the confused and confusing lingo that only theoreticians understand. Once the aims and ways are understood, only the confidence of management can result. With this confidence and with a realistic approach to managerial improvements, the systems specialist can fail only if he falls into complacency. To avoid this he must actively contribute to the progress of the systems and procedures field—a dynamic source of industrial success in the next quarter century.

J. W. HASLETT
Shell Oil Company

PRESIDENT'S MESSAGE

The growth of any organization is not only paralleled by the service it renders to its members but is, more or less, governed by it. And, just as the growth of an organization is governed by its service to constituent members, so is this service governed by the cooperation of each member. There, then, are the three potent factors which make for a successful organization: cooperation, mutual service and growth.

This first issue of *Systems and Procedures Quarterly* is tangible evidence of the growth of our association. Born of the cooperation of many and designed to offer assistance to all, it bids well to become the most authoritative publication in its field. Just as it depended upon the members for its beginning, it grows more dependent upon them for its continuance.

As a means of transforming our individual knowledge into the knowledge of all, it has no equal. Its success, like that of SPAA, is dependent upon members' acceptance of it and contributions to it. The enthusiasm for past SPAA projects, however, forces the officers to entertain only hopes for its success.

RAYMOND B. CREAN
The Baldwin Locomotive Works

Copyright 1950 by the Systems and Procedures Association of America, Inc.

TWO CONTROLS: TAB ROOM, TELEPHONE

How Supervisory Management Uses Simple Ways To Analyze and Control Operations

By C. E. NOLL

The first requisite in exercising supervision is to have the time to supervise. This applies particularly to unit supervisors, those in the first grade who are in immediate contact with operations. The tendency to engage in detail work, or to spend too much time in training or helping one individual, or to devote the bulk of their time to a single operation, will result in little or no supervision generally. The symptoms by which this can be recognized is the tendency to be constantly engaged in putting out fires.

Control is exercised by the supervisors. For that reason, the quality of control depends on the quality of supervision. If a firm has a planning or systems or methods department, that group will generally provide most of the basic elements of control for the supervisor to exercise. As part of their tasks, they will break-down every job to its elements and after evaluation, set up performance standards. The utilization of these standards in judging performance is the supervisor's responsibility, as he must evaluate the operation not only as a single routine, but also as related to overall operations.

Advantages of Tabulating In Exercising Proper Controls

One method of producing records that is outstanding for lending itself to control is punch-card tabulating, Tabulating installations are the sitting ducks for office managers. They provide all of the essentials for close control. Here we deal with unit records (punched cards). Each unit record contains a fixed number of columns to be punched, verified and sorted. Each operation in preparing a report can be analyzed, standardized and scrutinized to the nth degree. The establishment of the controls for this type of operation is relatively simple. The planning or systems men have laid out the procedures and established the standards of performance. The standards set may be readily adjusted for any changes in the system. All that remains is to match the performance to the standards and evaluate the results.

It is desirable for control purposes to set up the tabulating section as two units: the key punch unit, where all recording is performed, and the machine or tabulating unit, where all processing of reports is done, a unit supervisor being responsible for the operations of each unit and reporting to a section supervisor in charge of tabulating. The tabulating section does not ordinarily originate any routine. The basic documents to be processed are originated in other departments. These documents or records, time cards, bills of lading or other basic data are transmitted to the key punch unit accompanied by a control sheet. The control sheet has entered on it by the originating department the name of the department, the operation, the date prepared, predetermined controls, such s dollars, tons, man-hours or other applicable units. These documents when received in the key punch unit are time-stamped and put in process. A perforated section on the side of the control sheet is used for recording the tabulating processes. As each operator processes a batch of documents, the control sheet is stamped with the operator's number in the proper space indicating the tab operation. The time of start and stop is indicated, also the elapsed number of minutes for the operation.

The documents, the control sheet and the cards move through the key punch unit until the recording is complete. They are then taken to the machine unit for balancing—filing, until end of the period involved, and then report preparation. The balancing operation will prove the correctness of the totals recorded in the cards, against the pre-determined totals for the batch as shown on the control sheet by the originating department. The totals for the batch of cards are printed on the back of the control sheet together with a count of the unit record—the tabulating cards. The perforated portion of the control sheet is coded as to operations and department and is then detached. At the end of the day, these detached slips are returned to the key punch unit for punching of control cards. The control cards are tabulated at the end of a given period, generally monthly to provide the following control totals:

The number of cards prepared.

The time consumed for each operation.

The total cards prepared for each department.

The number of cards processed by each operator.

Total productive time by each unit.

These are all factors necessary to determine utilization, both of labor and machine. Due to the fact that many reports may be prepared in the course of a day, it may be necessary to maintain a production log for finished reports. This log is prepared on

---

Mr. NOLL is Manager of the Office Services Department of Matson Navigation Company, with which he has been affiliated since 1928. Mr. Noll, now Director at Large, is a charter member and past president of the San Francisco Chapter of SPAA.

duplicating equipment and is used in the tabulating room for the scheduling and recording of all reports. The daily log lists all reports due on that particular day, whether daily, weekly, monthly, quarterly or annually. In addition, special spot reports or statistical data required are entered in a separate section. As each report is completed the log is initialed by the operator, and time of completion entered. This log, plus the production records, enables the section supervisor to report to the manager:

1. The utilization of the labor force by comparing the productive time to the available time. This available time is actual, eliminating the time for rest periods, absence, make-ready, special assignments or other factors.

2. The utilization of the machines. This is an important factor as most tabulating equipment is used on a leased basis. The electric tabulators, the machines on which the reports are prepared, are the heart of the installation, also the most expensive. A good rule of thumb to be followed is to utilize the tabulators to the percentage that only a portion of the time of one tabulator is idle, for example; with a two tabulator set-up the utilization of these machines should be at least 60%, with three machines 70%, with four machines approximately 80%. With 80% utilization of the tabulators and no overtime, the installation is nearing its maximum production. The auxiliary equipment, punches, sorters, collators and others of that category, should be utilized to the extent that the tabulators are not held up waiting for cards to be prepared or selected and put in proper sequence for tabulating. One factor to be borne in mind is the choice of the method of processing, as it affects equipment and the cost factor may enter into it.

3. The scheduled completion of reports. This matter generally can wait until the end of the month. However, due to the increasing number of quarterly and annual reports rendered to Government agencies, the peaks occurring at these times require day-to-day revisions of schedules and at the end of the year always involves overtime.

So much for tabulating as typical of operations with all factors readily lending themselves to control.

Controls Over Telephone Communications

The next type of control involves an analysis of telephone communications. The switchboard operations of any firm today represent an open door to that company that may be uninviting or may have the welcome mat in front of it. There are, depending on the size of the business, hundreds or thousands of calls per day. A company doing a fair percentage of selling via telephone experiences a loss of calls due to mishandling, waiting to answer until the calling party hangs up or events of that nature which may cause a loss of sales. How to control this situation is the problem. The cost angle is the one usually approached. Many firms have no policy on telephone usage for local calls of a personal nature, although these calls do result in an expense, both for message unit charges and the individuals' time consumed in making them. There are controls available and it is only a matter of choice to apply them.

The telephone company has provided a tool for control. By breaking everything down to components and analyzing each detail separately, control is made possible. A service is made available to users of PBX switchboards whereby at irregular intervals, or upon request, a fixed number of incoming calls are monitored. The calls are checked from the time of placing at the central office until the called party answers. None of the conversation is monitored. A report based on a sufficient number of calls to provide a good cross section of the traffic is prepared in two parts: (1) An analysis of service rendered by PBX switchboard attendants on calls from central office; (2) A similar analysis of the handling by the parties called on the PBX extension. These reports are expressed in percentages with comparison of the objective (the performance standards), the results of the current report and the results of the last report.

There are sixteen points in the analysis of switchboard service covering answering, ringing, reporting, abandoning calls because of busy phones, and any unusual occurrences are listed in detail. The answering of calls by the extension users are analyzed and reported in six categories, again including calls abandoned because of slow answering. The foregoing permits intelligent control, enabling the office manager to adopt corrective measures both at the switchboard and by educational means to improve telephone usage, generally. The telephone company, as an additional service, provides material help in putting on the necessary educational program to correct poor telephone usage if disclosed either by these surveys, or by observation.

These two contrasting examples: tabulating, a method of preparing reports, and telephone usage, a phase of communication, were used to point out the fact that elements of control exist, sometimes in the form of detailed written records obtainable with little or no effort and again as in the monitoring system where no apparent records are available. The establishment of these controls is contingent only upon breaking-down the job to its elements and applying common sense to the problem. Controls properly applied by the supervisor serve to properly evaluate the result of the individual efforts of the workers. This evaluation should be the basis for not only the utilization of labor, but also for providing the rewards merited by those efforts. Good controls include, and should never minimize that most important factor of human relations.

PLANNING PROCEDURES FOR PROFIT

A Program for Administrative Cost Reduction Through Improvement in Management

By JOHN B. JOYNT

(The First of Two Articles)

In business today, emphasis is on cost reduction, such as in manufacturing costs, material costs, labor costs, maintenance costs and transportation costs. But, unfortunately, in a desire to produce more goods at lower costs the whole area of administrative costs is sometimes overlooked. Although maintaining a favorable profit position is vital, in some organizations it has caused complacency. Many officials sit back because their companies have made considerable profits. They take the position that they don't have to examine their administrative structure, since it is considered of lesser importance in its relationship to the rest of the business. They forget that profits, too, should be measured in relationship to what should have been realized, and not just the profit and loss statement of the preceding year.

The experience of one of the country's largest textile organizations illustrates what can be accomplished through administrative cost reduction. For twenty years this company had a fine profit record, even though administration was secondary in profit planning. Two years ago a new president was elected. He was management minded. He felt that improvement in management and reduction in administrative costs were the same, and that each had a bearing on profit potential. So he set out to improve the management of that company. The improvement program is not yet finished, but when it is, this company will not only be much better managed but administrative costs will have been reduced almost in half. Had this been done ten years earlier, profits during the ensuing period would have been several million dollars more. The company, nevertheless, was successful despite the fact that until recently it had considered administrative costs relatively unimportant.

A company which is considering a management improvement program, should start by identifying the factors which are essential to the success of such a program.

(1) First of all, what good management consists of must be recognized. This is the *know what* factor.

(2) Secondly, the company should determine how to arrive at the good management goal it seeks to reach. It should fix responsibility for management improvement, and determine the methods by which it will be accomplished. This is the *know how* factor.

(3) Thirdly, the company must have a genuine desire, to improve its internal management and reduce administrative costs. Normally, it is the well managed company which first recognizes the need for a more formal and organized approach to management improvement. A company cannot pay lip service to this undertaking and expect results. *Desire* is therefore a key factor.

(4) Finally, the *human relations* factors which are so important to the success of a program of management improvement for cost reduction must be faced fairly and squarely.

In an undertaking which has as its objective total management improvement it is well to consider the relationship between systems and procedures, organization planning, policy planning and other accepted phases of the management improvement program, as well as the best approach for carrying out the program. The approach discussed is somewhat different from the more common concepts. It is a company-wide approach, which assumes that improvement in management and reduction in administrative costs are the responsibility of all organization units, and therefore should be carried out under top management leadership with all major organizational units participating. It is at this point that the systems and procedures analyst takes his place in the top management group, in developing the program and coordinating specific projects throughout the organization. Under this approach, the technical and the human relations aspects of management improvement are of equal importance. They are discussed under the following headings:

(1) The Significance of Systems and Procedures.
(2) Planning and Developing a Management Improvement Program.
(3) Coordinating and Administering Specific Projects.
(4) Human Relations Considerations.

Mr. JOYNT is Manager, Administrative Engineering Department, American Enka Corp. He has been associated with the management consulting firm of Cresap, McCormick and Paget; he was Manager, Administrative Planning Department, North American Rayon Corporation and American Bemberg Corporation. Immediately following the war he became Director of the Administrative Management Service, Veterans Administration, Washington, D. C. and prior to that was a Lt. Colonel in the Control Division of the Army Service Forces. He has made managerial studies in large industrial organizations, the City of New York and various Federal agencies. He is a lecturer on management in the New York University and a member of the Society for the Advancement of Management as well as affiliated with New York City Chapter No. 1.

Copyright 1950 by John B. Joynt

THE SIGNIFICANCE OF SYSTEMS AND PROCEDURES

The task of improving management can be reduced to simple terms. Improvement involves deciding exactly what is to be done, determining the best methods of carrying out specific functions, and seeing that they are accomplished in the best possible way. That sounds simple. But if the statement is examined closely from a company-wide viewpoint it will become clear that it involves the basic responsibilities of management at all levels, beginning with the president of the company and extending to the first line supervisor. It includes an analysis of the manner by which a company administers its internal affairs, as well as the systems and procedures by which the tasks of management and the assigned responsibilities of each key official, each supervisor and each employee are carried out. Whether a company's affairs are administered loosely or on a scientific basis depends upon good personnel and effective leadership. But their effectiveness in turn depends largely upon sound organization and modern systems and procedures.

Relationship between Systems and Procedures and Policy Determination

Policy determination influences every administrative decision. It sets the goals and defines the objectives. It establishes authority and fixes responsibility. Policies, in effect, become the major procedures which guide the company's operations as a whole. For this reason, policies must be clearly defined and well understood throughout the company. Company policy is normally determined by top management. Operating policies are determined at all organization levels. Each division and department of the company takes part in policy determination, with only a difference in scope. Since policies establish the basis for taking specific administrative action, operating procedures should be given consideration in the formation of policy. Procedures should likewise be designed to facilitate their execution throughout the company.

Relationship between Systems and Procedures and Organization Planning

Organization planning insures that all the functions of a company are properly assigned; that the organization structure is well balanced; that there has been proper delegation of authority; that there is no overlapping, duplication or "fuzzy" relationships; and that the operation of the various organization units is well synchronized. But organizational determinations, except for certain top level decisions, cannot be made intelligently without consideration being given to the procedural relationships between the organizational units concerned. Organization planning determines what is to be done and by whom, since it fixes responsibilities. But procedures prescribe the "how", the ways and means of carrying out the "what". Consequently organizational planning is influenced largely by systems and procedures.

Relationship between Systems and Procedures and the Major Functions of Business

In all major aspects of a business, systems and procedures provide the key for effective administrative control. Budget and financial administration, credit, collections, the functions of the controller, secretary and treasurer involve company policy and require good judgment in their execution. But the effective administration of these functions requires modern systems and sound procedures.

The management of materials and capital assets requires proper planning, proper administration and proper controls to safeguard the company's interests. These requirements are met largely through proper systems. Effective personnel administration also demands sound policies and procedures. Handbooks for supervisors and foremen establish the basis for supervisor and foremanship training, better supervision and better employer-employee relations. Production planning and control, including statistical quality control, depend to a large extent upon system. Sales planning and forecasting require the collection and interpretation of proper facts and data. These data are collected, analyzed and interpreted through orderly and well planned procedures. Engineering, research and development activities are highly technical. But by placing in the hands of technicians the proper administrative tools, technical work is facilitated and the effectiveness of the technicians in their respective fields is greater.

In addition to the establishment of policy, the fixing of responsibility and the development of methods for carrying out the objective, results must be measured continually. This applies to individual functions as well as to the organization as a whole and is best accomplished through a well developed system of reports, designed to give to management at all organization levels the information needed to determine whether progress is keeping pace with predetermined objectives, so that corrective action may be taken when necessary. Business, certainly, is more complex today than ever before. New administrative tasks have added new administrative burdens. The burdens, however, are constantly being relieved through better methods, improved equipment and simplified administrative techniques. Because of the various phases of business with which systems and procedures analysts are concerned, the over-all job of administration is more complex than the technical aspect of any single phase of business. Technicians may disagree, but, while they have been trained usually in a single field, the procedure analyst must constantly deal with all functions of business.

The individual who rises to the top of a company is generally one who has done an outstanding job in

some specific field, sales or production, for example. He may well be the right man for the top job, but, unfortunately, he may not always fully appreciate all aspects of other company operations. He may not have the same concept of management as individuals who have had company-wide experience in the field of systems and procedures, for he has not had extensive operational contact through the whole organization. Sometimes this makes it rather difficult for systems and procedures analysts to secure proper recognition from their top management. Yet, despite these obstacles, selling the organization on the significance of effective procedures is an important part of the analyst's job.

PLANNING AND DEVELOPING A MANAGEMENT IMPROVEMENT PROGRAM

To obtain maximum benefits, the analysis and improvement of organization, policy, systems and procedures should be company-wide in scope. Consequently it is the responsibility of top management and every major organization unit of the company to participate in the analysis on a continuing basis. Furthermore there is a striking similarity between the relationships of top management and management at each organizational level, as well as of the tools of administration at each level. The difference is largely a matter of scope. Because of these close relationships, a management improvement program should be a well blended, well coordinated, company-wide effort, so that problems are attacked on a planned basis instead of sporadically. Although all organizational units should participate, top management must assume active leadership by planning, directing and coordinating the program. Each supervisor and each employee should be given an opportunity to participate in the improvement of his own work. To a large extent the success of the program hinges upon leadership and the ability of management at all levels to work together as a team. For that reason, it is important that systems and procedures people have active representation in the top management group to do an effective job.

Determining Specific Programs

In planning a company-wide management improvement program, a decision must be reached as to what the individual programs and projects will cover and the best approach for carrying them out. A program for improvement in administration normally will include the following:

1. *Analysis of the major functions of the company.* The analysis of major functions involves a determination as to the need for each function of the business and the proper location of the function within the organization. Although final decisions on major functions may rest with top management, it must be guided by the recommendations and judgment of division and department heads. Before an attempt is made to improve systems or procedures the necessity for and the assignment of the major functions within the organization should first be determined.

2. *Analysis of systems and procedures.* Following a decision as to the necessity for each major function, a thorough analysis of the systems and procedures should be made to insure that the assigned functions will be carried out in the most effective manner. The heads of the major operating units and their supervisors should participate in these studies, since they are responsible for the day-to-day operations. Although procedures should be given consideration in the development of a company organization manual, extensive and detailed procedural analysis should follow the development of the manual. There are two reasons for this. In developing an organization manual certain functions may be eliminated or changed to a considerable extent. In addition, the manual will serve as a guide in planning a company-wide program for the improvement in systems and procedures.

3. *Work simplification and employees' suggestion programs.* Installation of new systems and procedures involves the work flow between the various offices or organization units of the company. When this has been accomplished, an effort should be made within each individual office to eliminate every unnecessary movement in connection with the flow of forms and records, from one desk to the next. This is best accomplished after the most effective forms, records and equipment have been installed. Since this involves every office, each supervisor should be trained in work simplification techniques. Many companies have employees' suggestion programs. The work simplification technique is an effective means of assuring sound suggestions.

4. *Work measurement and performance standards.* No change should be made in any organization unless a distinct improvement results. To determine the advantages of certain improvements, a method of appraisal is needed. When the operation is a repetitive, production-like job, work may be measured. Where the job is one involving judgment as a key factor in addition to production, performance standards may be established. Both work measurement and performance standards may be used effectively in measuring performance following a change in organization, system or procedure and in a preliminary way in determining the value of a proposed change.

Deciding on the Proper Approach

If the company-wide program is decided upon, a decision must then be reached as to the best approach for carrying it out. In general, there are two major approaches. One is to bring in an outside consultant. The other is for a company to use its own employees. Both approaches have certain advantages. When an

outside consultant is retained it is desirable that he train company personnel in the use of the techniques, and in the administration of the program. He should work closely with the company's employees so that they will benefit from the consultant's experience. In pursuing the program without the aid of a consultant, there are again two approaches. One is to have a strong, central systems and procedures staff which carries out most of the studies. The other is to have a decentralized group working under the central guidance and control of a program leader in the top management group. Normally only larger companies have the continuing need for larger staffs. Medium and smaller size companies have to approach the work on a different basis. The pattern in each organization will vary. In the event that the major staff and operating units participate, the extent to which the program is centralized or decentralized is not too significant.

Obtaining Top Management Support

The success of the program will depend initially upon the support of top management, but thereafter upon the ability of the personnel responsible to carry out this work effectively. When the program is initially undertaken, it should be announced formally by the president of the company or one of his key assistants. The announcement should state what the program will cover and the manner in which it is to be carried out. It is considered important to emphasize that the program is company-wide in scope; that the unit responsible for carrying it out is to function in a service capacity without authority to issue instructions; and that projects are to be initiated at the direction of the president, or the executive vice president, or upon the request of key officials throughout the company. But prior to an announcement at that level, the chief executive should draw together the key company officials so that there is a meeting of the minds and an understanding at the top management level, as to the objectives of and approach to the program. A formal announcement should not be released until after such an understanding is reached. If top management is sincere in its desire to support this type of program, there should be no hesitancy to start it on that basis so that the entire organization will be aware of the program and of the support of top management.

Gaining the Support of Key Officials

As previously indicated, it is desirable to give the key officials whose operations will be affected an opportunity to consider and comment on the contemplated program before it is formally announced, particularly in companies where the program is entirely new or is being given formal recognition for the first time. This has the effect of solidifying relationships among the key officials before any specific projects are undertaken. Making certain that there is an understanding as to their responsibilities, including the contributions that their employees are expected to make, is also important. Furthermore, the program leader should meet with them and discuss each new project before it is undertaken. This affords an opportunity for frank discussion and a means of arriving at an understanding and a proper approach on each major project. Systems and procedures analysts are familiar with this type of program, but many executives, including capable ones in successful companies, may not be. For that reason it is important to devote such time as may be necessary to insure that the program is fully understood, and how key employees and the organization as a whole will benefit. The momentum of a good start will gradually disappear unless the individuals responsible for carrying out the program win and maintain the continuing support of the key operating officials. This support derives from effective work and the proper handling of the human relations problems that are always involved.

Surprisingly there is a close parallel between a company's top systems and procedures analyst and the company's safety director. A safety director must create safety consciousness throughout his company. This he accomplishes through the efforts and cooperation of the company as a whole. In order for a systems and procedures program to be effective, the company must become procedures conscious. In companies where systems and procedures are recognized as being an important function of the business, and where each unit is encouraged to make improvements, this consciousness quickly develops. To create this appreciation for systems and procedures is one of the primary responsibilities of the program leader.

Applying the Management Service Concept

Under the decentralized approach, the program should be carried out on a service basis. Systems and procedures people are in business to perform a real service. They are not to direct or to rush in and change things. They are to perform a professional service in their companies on the same basis as the lawyer, the doctor or any other professional group. They should keep abreast of the latest methods which have application within their companies, and make them available to the organizational units which will benefit from them. A procedures unit should have no authority to issue instructions to any other unit of the company. Its principle function is to plan, develop and recommend. If it does these well, its services will be in demand. If not, the function will soon disintegrate. This lack of authority is in effect a measure of strength in that it presents to the systems and procedures unit a real challenge, that of accomplishing results on pure ability. This is also influential in breaking down some of the

initial psychological barriers which sometimes develop before the real value of the program is fully understood.

Selection and Training of Key Personnel

Much of the success of any undertaking depends upon the capabilities of the personnel responsible. In carrying out a management improvement program, the selection of the employees who are to make the studies is of vital importance. Each major staff and operating unit should designate to participate in the program an individual who is capable of doing this type of work. In making the selection, the following factors should be considered.

1. *Qualification of Key Personnel.* The individuals selected must possess an abundance of good common sense and have keen analytical minds. Above all, they must be able to gain the cooperation, respect and confidence of all individuals with whom they will come in contact in carrying out their work. An individual with a degree in engineering or business administration, or both, normally insures the proper educational background. Many successful procedures and systems analysts, however, have had little formal education.

2. *Relationship of Key Individuals to their Chiefs.* In the final analysis, all systems changes must be approved finally by the staff or operating officials responsible. For this reason the individuals selected to carry out this work in the major operating units should be close organizationally to, and have the complete confidence of, their chiefs. For example in the controller's office, an assistant controller or the internal auditor, in the personnel department some one close to the director of personnel and in the plant a special assistant to the plant manager. The objective is to select individuals close to the executives who will pass on the recommendations made.

3. *Respect within the Company.* Since systems and procedures analysts must work with other organization units, they should have the good will of the entire organization. All major organizational units of the company will participate in or be affected by this program. Though projects will not be undertaken in all functions at the same time, it is desirable to select the individuals who are to conduct studies at the inception of the program so that they may be trained as a group. Such personnel may not be required on a full-time basis, but they should be available to work full time on a special project basis when studies affecting their units are being carried out. Before undertaking a company-wide program, the key personnel who are to conduct procedural studies should be trained in the techniques to be used. The training should be a combination of classroom and on-the-job training and should be at least as comprehensive in subject matter as the following list indicates:

a. Analysis and evaluation of organization principles and structures.
b. Program and project planning and control.
c. Survey principles and practices.
d. Analysis of procedures and systems, forms and equipment.
e. Analysis of recurring reports; progress reports and reports control.
f. Work simplification and work measurement.
g. Conference leadership.
h. Human relation factors.

Training sessions to be most effective should be devoted in part to the actual solution of specific company problems. In addition to training employees who are to participate in the studies, a preview is sometimes conducted for the top officials of the company to acquaint them with program, and the techniques and approach which will be used in carrying it out.

COORDINATING AND ADMINISTERING SPECIFIC PROGRAMS AND PROJECTS

In companies where there has been no formalized program for the analysis of organization, policy and procedure, the initial project is normally a complete analysis of the organization structure. It is also sometimes necessary to develop a company plan of organization to guide key officials in carrying out their own organizational plans. This establishes a pattern for preparing a company organization manual. Depending upon the size of the company, several organization manuals or a single manual in several parts may be desirable. For example, each of several plants may require a separate organization manual.

1. *What the organization manual will cover.* The manual is a collection of the organization charts and written statements of the responsibilities and authority of each key official, beginning with the president and extending to the first line supervisor. It may be desirable to include in the manual a brief history of the company, the company plan of organization, and certain accepted principles of organization which are helpful in organization planning.

2. *Use of the manual.* The manual has several uses. It presents to the organization as a whole a clear understanding of the position of each key official. The character of each key position, the function, responsibilities and authority, and its place in and relationship to the entire organizational structure are clearly set forth. The manual serves to promote a better understanding and appreciation of the responsibilities of others. It provides a means of maintaining a sound plan of organization. It also provides a means for determining that there are no conflicts or overlapping of responsibilities. An additional use is in

(Continued on page 14)

CHECKLIST FOR FORMS DESIGN

Fifteen Questions To Be Considered in Forms Layout and Manufacture

By J. H. RUTE

Forms design is only one of the parts that contributes toward the success of a forms control program, but it may well be considered the keystone, since no forms control program can go far in accomplishment without good forms design. Forms design has three objectives. First, to provide the maximum of efficiency to the form in accordance with the techniques under which it will be processed. Second, to insure economical specifications and to save paper. Third, to provide forms that are neat and pleasing in appearance but still possess a standardized style.

Style is the element of a form that should be decided at the early stages of a forms control program and deviations allowed only when the standard design is sincerely objectionable. One of the most common styles is that which is produced on a typewriter and usually consists of a caption or query followed by a blank line for the answer. A disadvantage to this style is that much lateral space is consumed by the captions. The next refinement in forms style is to apply the caption or query to space below the line provided for the expected answer. While this style represents a saving in lateral space, it presents a new problem for forms that are to be filled in by a typewriter. The form must be rolled up high enough on the platen for the caption to be read and then lowered to line level for the answer to be filled in. Thus, an economy is offset by a deficiency. Too, the filler-in must approximate his space for each answer or he cannot supply all the required information on the given line. A logical solution to these two styles is the box type design. This type results in visible captions without unnecessary platen movements; saves lateral space and provides the filler-in with a definite area within which to place his information.

To accomplish the objectives of forms design there must be a plan to approach the development of a new form besides the standardization of design type. If the elements of forms design are laid out like the pieces of a jig-saw puzzle, each piece can be evaluated and put in its proper place. The first step in the development of a new form is to write down exactly what the form is to accomplish in the way of transmitting or recording information. All of the information required by all who are involved in the procedure should be listed and a careful examination of the details should be made and all duplications and inessential material screened out. The next element to be considered is the people or functions who will fill in the information. If possible, the requirements should be grouped into sections so that areas of the form can be allocated to the functions concerned. The main fault to avoid is requiring a person or function to read completely through a form in order to fill in information which could be concentrated.

The sources from which the information is taken should be considered, if it is transcribed, and the sequence in which it is to be used, if it will be posted to other records. The sequence should be maintained so that errors in posting in the wrong column are more easily avoided. Allocation of areas on the form to people or functions concerned and maintaining the sequence of items that are posted or transcribed are for the purpose of promoting a continuous flow to the operation of filling in the form. When it has been determined what information is essential to the form and what the probable groupings and sequence are, the following questions should be asked and provisions made accordingly:

1. Is the form to be controlled by printed prenumbering? If it is, it should be remembered that this feature usually adds to the cost of the form and the position of the numbers on the form can be an extravagance. Numbering should be made in one of the four corners whenever feasible. Avoid showing the number in more than one place when possible.

2. Are the fill-in spaces on the form numerous and would it facilitate references to the form if each caption were numbered? It is easier to find box 26 on a form with numerous fill-in spaces than to give the caption and describe its location or let someone read through until he comes to it.

3. What is the method of fill-in, manual or machine? Spacing will be allotted for the expected information according to the method of fill-in. Special machines such as IBM, NCR, Burroughs or similar mechanical fill-ins may dictate limitations regarding the placement of information.

4. What is the method of filing? Important filing information can be shifted to point of maximum utility. Marginal space can be allowed for Acco fasteners or ring binders.

5. Is a window envelope to be used for transmitting

Mr. RUTE, of the Philadelphia Chapter, is director of the forms control program of the RCA Service Company, Inc. As a systems analyst he has developed methods and procedures for a wide variety of manufacturing companies. He has studied at Columbia University and New York University.

---

this form? If so, every attempt should be made to make the form usable in a standard window envelope, thus avoiding uneconomical special types.

6. Are check-type answers called for wherever possible? For example, a box might be captioned "Marital Status" and within the box would be printed all the possible answers with provisions for the filler-in to indicate his status by a check mark. However, the possibilities need not be limited to known answers by the inclusion of a fill-in captioned "Other." Check type answers provide positive answers and conserve writing by the filler-in.

7. Should spaces be provided for "to" and "from"? Careful attention to this detail may eliminate the necessity of transmittal letters.

8. Has a good descriptive title been selected? People who use the form are more apt to remember the title of the form than its number, consequently, each form should bear a title. The title should be brief but descriptive and as definite as possible.

9. Should instructions be printed on the form? Basically, an efficient form is self-explanatory. However, if instructions are felt to be essential, several factors should be weighed before a decision is crystallized. If the forms are being filled out repeatedly by the same personnel, repetition is redundant and will soon be ignored, consequently, all copies of the form beyond a certain point contain waste space. If the forms are being filled in by different people each time (such as an order form) and the instruction is too complex for captions to do the job adequately, there might be some justification for instructions. At any rate, it should always be remembered that changes in the instruction will obsolete the form or create confusion. If the forms are padded, a possible compromise can be effected by using the fly leaf for instructions, thereby reducing the amount of space used and, subsequently, changes in instructions can include the destruction of the fly leaf.

10. Should distribution appear on the form? If it is deemed necessary to show on the form, specific names and locations should be avoided as they subject the forms to the same limitations of obsolescence and confusion as other detailed instructions do by virtue of changes.

11. What quality and weight of paper should be chosen? All factors should be evaluated, such as life expectancy of the form, amount of handling, number of copies to be written at one time and the method of writing, method of filing, printed both sides, for internal use as work paper or to create impression on prospective client or customer, and method of reproduction. Papers that are difficult to obtain should be avoided or reorders may be slowed down.

12. What governs the selection of the method of reproduction? Probably the most critical factors are the quantity needed and the time allowed for reproduction. Next, the quality desired in the finished form should be determined. Special features may dictate the method if forms are to be used in special machines or with spot carbons, perforations or numbering.

13. Which is more economical, colored paper or colored inks? In multicopy forms, colors are used when they facilitate routing, sorting, filing or to attract special attention. Colored papers usually have a slightly higher cost than comparable stocks of white. Colored inks involve the costs of special cleanings of the equipment. If the quantities ordered are large, use of colored inks will usually be more economical because the cost of special cleanings will be dissipated over the lot, whereas the slightly higher cost per sheet of paper is ever increased with the quantity. If small quantities are ordered, the converse applies, colored papers should be favored over colored inks.

14. When to consider precarboning of multicopy forms over manually inserted carbons? The cost should be weighed against the advantages obtained. Precarboning eliminates the faults of overused carbons and is almost a necessity if many copies are made at one time or the form is machine written as a continuous form. If few copies are desired and carbon can be inserted manually on non-productive time (for example, if there is waiting or walking time between the executions of the forms, carbons could be inserted manually during such non-productive periods) an economy might be effected by not precarboning.

15. When to consider continuous forms? When the operation is continuous in nature, such as billing, invoicing, shipping, receiving, etc., or when specialized machinery is used.

In general terms, most of the factors and considerations of forms design have been covered; however, each new form or reprint of an old form has its own peculiarities to be considered. The writing of specifications for forms should be as carefully considered as the sequence and layout of the features within the form. Specialized vendors of forms should frequently be consulted for any suggestions they might have in effecting economies. The people who use the forms should continually be solicited for suggestions on how to make the forms easier to use or easier to file.

TO THE POINT

Some Penetrating Observations from Proceedings of SPAA National Systems Meeting

I cannot emphasize too strongly the necessity of guarding against becoming overzealous in the application of these [work] measurements and control. The caliber of an office employee's intelligence prohibits a regimented, stereotyped work environment. Over-simplification or too rigid a delineation of duties can introduce nothing more than a feeling of frustration and dissatisfaction. Proper education, re-education and follow-up information can bring about the desired methods as a by-product of individual ability.—*H. F. van Gorder, U. S. Steel Corporation of Delaware.*

Thinking about how a thing can be done is not training—that's education. We are sometimes confused by this separation—the fact that training involves a great deal of education but education does not necessarily include training. We can, for instance, devote many hours to the subject of organization. We can talk about the various forms of organization, the causes of these forms, how effective each form is under given circumstances and how to set up an organization. We have thus educated the listeners in that subject. . . . However, through lectures on organization we have trained nobody. To train an analyst in organization we first educate him, and then train him by giving him an assignment involving organization, following through to make certain the proper factors are being considered. Thus, through education and practice, we train.—*Elles M. Derby, Metropolitan Life Insurance Co.*

If you have measurement of production, you need measurement of quality. In the long run the satisfactory employee does good quality work as well as maintaining good production, and both must be considered in judging performance. The quality standard, as we talk about it, represents normal quality. We feel that people are going to make mistakes —in fact we know they are because it's human—so we have to set up a standard for normal errors. That is based on individual records for at least four weeks prior to submitting a quality proposal.—*E. Willard Gardiner, Sears Roebuck and Co.*

We find that work simplification does provide supervisors and workers with new tools to work with—mental tools if you will—creative tools. These tools can change the status of these people from being adjuncts to masters of the physical tools with which they work. Work simplification can provide the environment where industrial democracy can grow: that is, can extend the area where people can make self-determinations. — *Professor David B. Porter, New York University.*

To pay its way, research should crystallize into a basis for action. This generally means a comprehensive report. It should be clear and concise, and may indicate the scope of the review. It may show a comparison of the "as is" procedure with that proposed when it is desired that the current condition be disclosed as the basis for the recommendations. It should present the accumulation of justified facts, the logical conclusions, the recommendations. If installation of approved recommendations is not a part of the charge, recommendations should be presented in a way as to leave no doubt as to how they are to be installed. — *Phillips C. Salman, Socony-Vacuum Oil Co., Inc.*

I believe that control of accounting by electronics is a lot closer than most persons think it is. It is my belief that with the advent of electronics as applied to office machines, you are going to be able to have machines built to your specifications at a cost that you can afford and with truly tremendous savings to your company.—*Leonard J. Angus, Systems Analyst and Consultant.*

Mechanization is a part of the office simplification program when the creation of office records and reports becomes a task of either repetitive operations or a problem of mass production. . . . To accomplish the desired results your system must: (1) be necessary; (2) give the facts required; (3) be simple; (4) be easy to operate; (5) be able to expand; (6) cover all transactions; (7) utilize time saving equipment; (8) cost as little as possible to install and maintain; (9) fit in with management policy; (10) be acceptable to your personnel.—*Richard Neumaier, Systems Analyst and Consultant.*

. . . **Now that** we have examined the four things that cause people to resist change, what can we do about it? The secret is contained in one word, PARTICIPATION. If we can only develop the new method on a participating basis, there is no problem of complacency, habit patterns are changed voluntarily, criticism is avoided since it is shared and security fears are quieted. No one resists his own new ideas. He gladly goes along with the group if he feels that he shares the credit.—*Professor William R. Mullee, New York University.*

(Copies of "Proceedings of National Systems Meeting" may be obtained at $1 per copy from the National Secretary, SPAA.)

MANUAL VS. MECHANIZED

When and How to Mechanize an Accounting Office
An Outline of the Considerations Involved

By MICHAEL A. C. HUME

1. Accounting machinery, properly applied, offers the following advantages over manual methods:
   (a) Accuracy of mechanical computation.
   (b) Speed in writing.
   (c) Neat, uniform, legible records.
   (d) Simultaneous entry on more than one record.
   (e) Elimination of monthly peak loads because of daily automatic balancing.
   (f) Mechanical proof features which result in the detection of an error promptly after it is made.
   (g) Release of human talent for more important work (tasks which require foresight, tact and judgment) because machinery performs the tedious and routine part of writing and computing.
   (h) A machine method may be less costly than a manual method.

2. The increased productivity made possible by the machinery does not imply the elimination of personnel.
   (a) Usually (especially in well-planned installations), the same personnel are employed, but the machinery is used to provide valuable statistical information for management, not previously obtainable.
   (b) It is not an exaggeration to say that the contemporary science of managerial control through accounting rests firmly upon a foundation of accounting machinery.
   (c) Such managerial control requires a great volume of information, promptly reported. Manual methods not only would be prohibitive in terms of cost, but would be hopelessly slow. Management needs up-to-date information for prompt action.

3. Despite all this, a machine method is not always preferable to a manual method:
   (a) Mechanization cannot guarantee accuracy. (If the operator puts the wrong amount into the machine, the result will be incorrect.)
   (b) In some operations, a manual method is faster. (Example: Scatter-posting of amounts of a few digits each.)
   (c) The greater neatness of machine written records may not be important. (Example: Many companies are now using reproductions of original handwritten records for internal reports.)
   (d) Simultaneous entry can be obtained with manual records. (Example: The collating and writing board.)
   (e) Peak loads can be eliminated by other means. (Example: Cycle mailing of statements, with the ledger divided into the proper control groups. In some industries there is a definite trend towards the complete elimination of statements.)
   (f) Various techniques of internal control are available for use with manual methods, too.
   (g) Despite the demonstrable advantages of machinery, some bookkeepers have a strong preference for manual methods. (This is not an argument against mechanization, so much as a mention of a point to be considered when mechanizing.)
   (h) A manual method may be less costly than a machine method.

4. In view of the complexity of the problem, how is a decision to be made:
   (a) When to mechanize?
   (b) What specific equipment to choose?

5. There are certain principles which may be used as a guide:
   (a) Occam's Razor: The simplest and least involved method which satisfies all of the requirements is probably the best.
   (b) The Tool Concept of Mechanization: Any office machine is merely a tool to perform some basic clerical operation.
      (1) According to this concept, we do

Mr. HUME, of New York City Chapter No. 2, is Supervisor of the Methods Consulting Department of Bennett, Chirlian and Co., Certified Public Accountants. Previously he has been a member of the systems staff of J. K. Lasser and Co. and of General Foods Corporation. He is currently conducting a course on mechanized accounting methods at the City College School of Business. He is Associate Director of Education of the New York Chapter of the National Association of Cost Accountants.

---

not approach a problem by saying, "I want a machine to do my payroll."

(2) We do say, "My payroll problem is composed of elements which involve writing, computation, duplication of written information, and classification of this information. What equipment is available to facilitate these basic clerical operations?"

(c) The Principle of Fair Comparison: The best variation of the manual method should be compared with the best variation of the machine method.

6. Intelligent application of machinery to the accounting office requires a knowledge of the equipment available.

7. The following are some of the means of keeping informed about equipment:

   (a) Join a professional group, such as SPAA, NACA, NOMA.

   (b) Subscribe to magazines such as "The Office," "Office Management and Equipment," "Office Appliances," etc. Also, occasional articles on accounting machinery are published in magazines of general business interest, such as "Business Week," "American Business," "Fortune."

   (c) Get on the mailing lists of the equipment manufacturers. Study their literature.

   (d) Visit showrooms for equipment demonstrations.

   (e) Talk with equipment salesmen. (A good equipment salesman can give you plenty of worthwhile information.)

   (f) Attend business shows.

8. In addition to a knowledge of equipment, familiarity with procedures is essential. To illustrate this point, consider accounts receivable. There are available the following basic types of mechanized procedures (each with its own variations) which might be applied:

   (a) Open-item plan.

   (b) Unit plan, with ledger entry a carbon of the statement.

   (c) Fold-over bill plan, with credit history.

   (d) "Bookless Bookkeeping."

   (e) Cycle Billing.

9. The importance of procedures must be stressed.

10. Since the office has lagged far behind the factory in the application of machinery to repetitive tasks, there is a great need for well-planned mechanization. The approach suggested here will help avoid costly errors.

QUALIFICATIONS OF SYSTEMS MEN

By GENERAL DONALD B. ARMSTRONG,
President, U. S. Pipe & Foundry Co.

First of all, if the systems man occupies the position in the organization which I have in mind, he will be close to the chief executive. A weak character may derive from that an inflated ego and his attitude may be arrogant, and he, himself, may lack the modesty and humility that would better enable him to perform his duties. He is apt to be like a certain commanding officer, famous in the Army, who said to a new Second Lieutenant that the Second Lieutenant and he would surely get along extremely well together, but, he added, "You will do all the getting along." The systems man must have competence, of course. He must know everything there is to know about organization and procedures and be able to provide readily understandable standards for particular functions. He must, however, supplement his scientific knowledge and ability with imagination and initiative in order to suggest better methods and organization. Of course, he must be tactful and, finally, he should be able to present his ideas forcefully and succictly.

As I conceive it, no staff agency will be more useful in enabling the chief executive to obtain his objectives than the systems expert. With his help, the chief executive will establish and maintain an organization fitted to the needs of the company. He will help to establish harmonious relations between line and staff. Through the efforts of the systems personnel it will be possible to follow up plans and programs, and results obtained will be known so further decisions can be intelligently reached.

(Excerpt from Gen. Armstrong's remarks at National Systems Meeting of SPAA.)

(Continued from page 8)

executive development and foreman and supervisory training. It is helpful in developing individuals for the assumption of more important responsibilities. In general, it is considered a basic guide to all key officials whose responsibility statements appear in the manual, as well as their subordinates, in planning, coordinating and directing the operations of the company.

3. *Responsibility for preparing the manual.* Each key official should assist in the development of the organization manual, by preparing a statement which will reflect his major functions, his responsibilities and authority, and his relationships with other key officials within the company, as well as all significant relationships outside the company. There are several reasons for having each key official prepare his own statement. First of all, he knows his own job better than anyone else and therefore is in the best position to develop his own statement. Also, it brings the entire supervisory structure of the organization into the initial project. This causes each key individual to give serious consideration to his own responsibilities and those of others. Furthermore, if each key individual prepares his own statement, completion of the manual will be facilitated. During the process of preparing these statements, questions may be developed as to responsibility and authority. In fact, that is one of the reasons for developing the manual. Such questions should be referred initially to the employees' immediate superiors for clarification.

4. *Issuing instructions for preparation of the manual.* Before an organization project of this significance is undertaken it should be announced officially. The announcement should explain what an organization manual is, its use, and who will be responsible for its preparation. It should contain a statement of responsibilities which are inherent in all executive and supervisory jobs so that it will not be necessary to include such responsibilities in individual write ups. Sample statements should be developed covering the authority and responsibility of a few officials to illustrate the style and format. Using the statement of the president of the company for this purpose is an excellent device in securing enthusiasm of other officials throughout the company.

5. *Format and content of statements.* It is usually desirable to segregate the responsibility and authority statements into four major parts:

a. *Major functions.* The purpose of this part is to give a brief but general picture of the position in its entirety without going into details. It should be a brief summary of the major aspects of the job, including the area of jurisdiction when this is pertinent, such as company-wide or all plants or offices. It should cover those things which clearly distinguish the position from all other positions.

b. *Specific responsibilities and authority.* The responsibilities and authority include the specific aspects of the position which the individual is required to perform in carrying out the job. Everyday routine responsibilities, which every supervisor carries out should be excluded. Again it is important to include those things which distinguish the job from all others. The authority extended the individual in carrying out his responsibilities or any limitations thereof should be included.

c. *Relationships.* Relationships within the company as well as outside relationships which have an important bearing in carrying out the responsibilities should be given.

d. *Method of measuring effectiveness.* The criteria by which the individual concerned as well as his supervisor may determine whether the assigned responsibilities are being effectively carried out should be established. Such criteria provide the basis for subsequent performance evaluation.

After all statements of authority and responsibility have been prepared and concurred in, they should be submitted through channels to the office responsible for organization planning. This office should then evaluate the organizational proposals and make such recommendations as may seem appropriate to the president of the company, or other designated official, to insure a sound plan of organization. The manual should then be prepared for distribution throughout the company. This is a major undertaking for the organization planning office.

Developing a System of Internal Communications

In order that organizational, policy, procedural and informational data are properly prepared, coordinated, approved and distributed throughout a company, a system of internal communications is required. This is particularly essential when studies covering organization, policy, and procedure are being made, since the end products, to a large extent, will be in written form such as manuals or handbooks. When manuals have not previously been prepared, it is desirable to have some type of temporary release in order to formalize and install organization and procedures changes as they are developed. Temporary releases may be incorporated into policy and procedure manuals later when the studies of all the policies and procedures covering a given function are completed.

Conducting Systems and Procedures Studies

The objective of such a program should be to insure that the company is operating under the most modern systems and procedures, and to reduce to writing the

policies and procedures concerning the company's major operations. Such studies should cover the clerical and administrative functions of all offices, plants or other establishments throughout the corporate enterprise.

1. *General approach.* Under a decentralized approach the key individual assigned to work on projects involving his organization unit, the head of the organization unit concerned and the company's systems and procedures analyst, when necessary, participate in each major procedures project. Each organization unit is encouraged to the fullest extent to make improvements on its own initiative and in cooperation with other organizational units. This approach assists in breaking down the natural resistance to the outsider or the experting approach, which frequently prevails when an outside unit makes complete and independent studies, develops a final plan and then attempts to sell the plan to the operating units concerned.

2. *Planning specific projects.* Procedures projects should be carefully planned in advance. Since many of the major procedures cut across departmental lines, a functional rather than a departmental approach is the most effective. For example, in the supply function there is a close relationship between the various procedure steps, regardless of the organizational unit through which the work flows. In connection with the procurement of raw material and supplies, the procedures job begins with procurement planning and the determining of requirements and ends with payment for the materials purchased. The various procedure steps in between are all closely related. Consequently, they should all be studied as a single project. Since nearly all procedures affect several organization units, the procedural relationship between departments becomes a primary factor in planning this type of project. Another key planning factor is to determine the specific projects from which the company will derive the greatest benefits. In this connection the number of individuals required to carry out the operations under each major procedure is pertinent. To determine this, it is desirable to compile a tabulation of all clerical personnel as well as employees who supervise clerical and administrative functions. The tabulation should include a grouping of all the company's procedural operations broken down by each major function, such as supply or personnel, and the number of persons carrying out each such function broken down by the organization unit. Although production and technical personnel have certain clerical and administrative paper work to perform, they should be excluded from the tabulation. Based upon such an analysis, it is not difficult to determine the functions which should be grouped together as major procedures projects. This will also determine the size and scope of the studies and the organizational units concerned. Such information is helpful in determining the proper priority of projects, and who should participate in individual studies. After these factors have been determined, a project plan should be developed in writing and all individuals concerned should be furnished copies of the plan.

3. *Analyzing and developing new procedures.* The exact manner of conducting procedure studies will vary in different companies and on different projects. The following approach has been used very successfully in many organizations:

a. Prepare step-by-step "before" procedures flow charts, which reflect the movement and the action taken on each form, record and report as it progresses throughout the various organization units concerned.

b. Analyze each step in the work flow and all forms, records, reports and equipment as well as office layout to determine if any changes are desirable.

c. Where a change appears desirable, develop revised forms and reports and prepare "after" procedures flow charts to reflect such changes.

d. Summarize the advantages of the proposed changes.

e. Prepare drafts of new procedures.

f. Secure concurrences of all officials concerned.

g. Assist operating units in installation including the conducting of tests when necessary.

4. *Preparing policy and procedure manuals.* Some organizations have attempted to draw a clean-cut distinction between policy and procedure and to issue each in separate instructions or separate manuals. Although there are some advantages to this approach, it also has serious disadvantages, for it is frequently difficult to draw a distinction between policy and procedure. Each has such a decided influence on the other that a change in policy will normally affect the procedure and vice versa. It is desirable to include in manuals policy and procedure covering all major functions of the business. As new procedures are developed they should be released in writing as soon as possible so that the organization units concerned may derive benefits from them. Such procedures may either be released initially in manual form, or in some temporary form for subsequent inclusion in policy and procedure manuals.

Supervisor and Worker Participation in Work Simplification

Systems and procedures improvement and work simplification are closely related. Systems and procedures improvement involves the flow of work between divisions, departments, offices and plants, perhaps even new forms and equipment. It is closely related to organization and policy planning. Work simplification is a further refinement of systems analysis. Al-

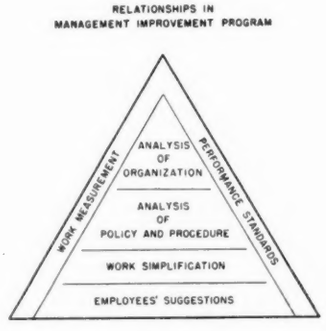
though it is not dependent upon policy or organizational determinations, it is a definite part of a "total" management improvement program. It is particularly important in that it brings the first line supervisor, and in some cases the worker, into partnership with the company's management. Simplification of procedures is a primary responsibility of departmental management. But work simplification is carried out by the first line supervisor, through simple and easy-to-apply techniques. It is designed to encourage and capture benefits from the entire supervisory group, including individual workers. The principal tool is the process chart. It is used in the analysis of each detailed step, the movement of each piece of paper from one desk to another and the distances traveled.

Work simplification involves training of the first-line supervisors and in some organizations the worker. But it is desirable to conduct an "appreciation" session for the department managers and top company officials first so that they will fully understand and support the program. Training is an important part of the program. When work simplification is launched before company-wide systems and procedure studies are made, it normally emphasizes the need for such studies. Furthermore, it sometimes results in some supervisors' improving operations that are not really necessary, or which should be changed materially. Although there is nothing wrong with this, work simplification logically follows the installation of improved systems and procedures. If a company is planning to launch both programs, that is the proper sequence. But regardless of when a work simplification program is launched, it always pays off.

Applying Work Measurement at the Supervisor Level

Work measurement is an essential part of management improvement. It provides a method of establishing a proper relationship between work volume and manpower requirements. It should be used by supervisors as well as personnel engaged in the development of systems and organizational analyses. It has many uses. First of all, it provides a basis for determining the advantages and gains through organization and policy changes, systems and procedure improvements, work simplification, training and improved supervision. Its primary use is to estimate and substantiate personnel needs. But it is helpful in scheduling work, making personnel assignments and planning for peak loads and vacations. It is also used to evaluate performance against established standards, and to compare the performance of different offices engaged in the same type of work.

But more important is its use as a management tool. Many organizations look at work measurement as something that relates to budget preparation only. Although it is an essential part of budgeting, its value as a tool of supervision and a means of improving management at the supervisor level should not be underestimated. It is a planning device. Through it can be determined if standards are being met. It causes a supervisor to become more cost conscious and management minded. The approach to work measurement is somewhat the same as work simplification. Department heads should be orientated in the program first. They should understand its purpose, and use, as well as the mechanics of applying it. Key supervisors should then be instructed in its use.



Relationship Between Program and Projects

The individual programs blend logically into a smooth, well synchronized, company-wide, management improvement program. The initial program is the analysis of function, or organization planning. It is the responsibility of top management with all major organizational units participating. As the organization ladder is descended, organization planning becomes more closely identified with day-to-day operations and with systems and procedures. The second program is the analysis of all the major policies and procedures. This relates to organization analysis, since procedure analysis frequently results in organizational change. Procedural analysis is the primary responsibility of all divisions and departments.

After systems and procedures have been improved and the organization structure established, first line supervisors still have the job of improving the layout and work flows in their individual units. This is accomplished through work simplification. In carrying out these programs, the objective is always better results or management improvement. How well a company is doing can be determined through work measurement, for repetitive jobs, and through performance standards for jobs requiring specialized knowledge, good judgment, and high quality, as well as output. The accompanying chart describes the relationship between these programs.

(Mr. Joynt's article will be concluded in the next issue.)

Systems and Procedures Association of America

NATIONAL OFFICERS

RAYMOND B. CREAN, *President*
Baldwin Locomotive Works

J. G. NAGRO, *1st Vice President*
Birds Eye-Snider Division
General Foods Corporation

L. M. MANNASMITH, *2nd Vice President*
Montgomery Ward & Company

A. L. METTLER, *Treasurer*
Electric Storage Battery Company

GIBBS MYERS, *Secretary*
Federal Telephone & Radio Corp.

V. H. ROMAN, *Director*
Standard Oil Co. of California

R. O. METCALFE, JR., *Director*
California Gas Company

SIDNEY KNIGHT, *Director*
Cresap, McCormick & Paget

GEORGE F. JOHNSTON, *Director*
Socony-Vacuum Oil Company

NATIONAL EDITORIAL BOARD

J. W. HASLETT, *Editor*
Shell Oil Company

VICTOR LAZZARO, *Managing Editor*
Merrill Lynch, Pierce, Fenner & Beane

DONALD TITUS, *Business Manager*
Research Institute of America

ASSOCIATE EDITORS

WILLIAM H. CLARK
Price, Waterhouse & Company
New York City Chapter No. 1

JOHN R. CROWLEY
U. S. Gypsum Company
Chicago Chapter

P. H. DAGGETT, JR.
Glenn L. Martin Company
Baltimore Chapter

C. L. HORNER
Jones & Laughlin Steel Corp.
Pittsburgh Chapter

RICHARD MAY
Industrial Indemnity Company
San Francisco Chapter

R. F. PERDUNN
Merck & Company, Inc.
Northern New Jersey Chapter

JOHN PICCINOTTI
Fairbanks Morse & Company
Los Angeles Chapter

DR. G. P. STONE
N. Y. Naval Shipyard
New York City Chapter No. 2

ROBERT H. TAUNT
The Budd Company
Philadelphia Chapter

LOCAL CHAPTERS

BALTIMORE CHAPTER
J. H. PENNY, *President*
B. & O. Railroad
OWEN MCCONNELL, *Secretary*
Commercial Credit Company

CHICAGO CHAPTER
J. C. MESSER, *President*
Peoples Gaslight & Coke Company
M. A. SOLDINGER, *Secretary*
Shure Brothers, Inc.

LOS ANGELES CHAPTER
A. L. ALVES, *President*
Rexall Drug Company
H. F. CAMPBELL, *Secretary*
General Petroleum Corporation

NEW YORK CITY CHAPTER No. 1
J. H. BEATTY, *President*
Metropolitan Life Insurance Company
VICTOR LAZZARO, *Secretary*
Merrill Lynch, Pierce, Fenner & Beane

NEW YORK CITY CHAPTER No. 2
E. E. KLEIN, *President*
Gulf Oil Corporation
T. S. FRICK, *Secretary*
American Machine & Foundry Company

NORTHERN NEW JERSEY CHAPTER
H. E. SANDFORD, *President*
Merck & Company, Inc.
R. F. PERDUNN, *Secretary*
Merck & Company, Inc.

PHILADELPHIA CHAPTER
L. H. GOODHUE, *President*
Armstrong Cork Company
J. LEWIS NUNGESSER, *Secretary*
Philadelphia National Bank

PITTSBURGH CHAPTER
EDWARD F. JAMES, *President*
U. S. Steel Corporation of Delaware
C. G. BISHOP, *Secretary*
Gulf Oil Corporation

SAN FRANCISCO CHAPTER
J. H. HULEN, *President*
Safeway Stores, Inc.
J. C. PETERS, *Secretary*
Matson Navigation Company

Systems and Procedures Quarterly is published four times a year by the Systems and Procedures Association of America, Inc. Copyright, 1950, by the Systems and Procedures Association of America, Inc., 100 Kingsland Road, Clifton, New Jersey. Single copies, $1.